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Does underground economy respond symmetrically to tax changes? Evidence from Greece

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Abstract

We employ Greek data over the period 1960–1997 to examine whether or not the underground economy responds asymmetrically to tax changes, both indirect and direct. Asymmetry implies that taxpayers react in a different manner to tax increases and to tax reductions. To test this hypothesis, we specify and estimate a vector error correction model. The empirical evidence suggests that, when indirect and direct taxes rise, taxpayers move into the underground economy as quickly as they move out of it when indirect and direct taxes decrease. Thus, our results do not give support to the asymmetry hypothesis. This finding has important implications for the effectiveness of fiscal policy in view of the country joining the EMU. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

The size of the underground economy in Greece has long been an issue of concern to policy makers. Recent evidence suggests that the problem is especially serious today. Kanelopoulos et al. (1995) estimated the size of the underground economy in Greece to be 34.6% of GDP in 1988 while the Foundation for

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Economic and Industrial Research (Tatsos, 2001) puts it at approximately 34% of GDP over the period 1990–1997.^{1,2} It is widely believed that high tax rates and ineffective tax collection by the government are the main causes contributing to the rise of the underground economy.

Economists have established a relationship between tax rates and the amount of tax evasion or the size of the underground economy; see for example Frey and Pommerehne (1984) and Trandel and Show (1999). The higher the level of taxation, the greater the incentive to participate in underground economic activities and escape taxes. However, there is no guarantee that tax changes influence underground economic activity symmetrically. Thus, whereas agents may move quickly into the underground sector to avoid an increased tax burden, a reduction in tax rates may have little effect on underground activities if they remain undetected (Giles et al., 1999).

The possibility of asymmetric response of the underground economy to changes in the effective tax rate has some important policy implications. On the one hand, the higher the tax rates, the stronger the incentive to participate in the underground economy and tax evasion activities. On the other hand, high levels of activity in the underground economy stimulate pressure for increased government expenditure and transfer payments, while the smaller the tax base the higher the tax rates required to raise government revenue.

However, this asymmetric effect has received little attention in empirical literature despite its importance. Giles et al. (1999) have examined this argument using data for New Zealand over the period 1960–1994 and their results do not support the asymmetry hypothesis. This means that the underground economy responds equally to tax increases and to tax reductions.

In the present paper, employing Greek data over the period 1960–1997 and using recent econometric techniques, we examine whether or not the underground economy responds asymmetrically to tax changes, both indirect and direct. We believe that Greek data are well suited to an examination of the asymmetry hypothesis because of: (a) the high level of underground economic activities in comparison to recorded economic activity; and (b) the relatively high indirect effective tax rates vs. direct taxes compared to other European Union countries. If

¹ In both studies the underground economy is defined as the total sum of economic activities which are included in current definitions of measurable economic activity but which are not captured by current measurement techniques. The desire to escape taxes or regulation is the main cause that gives rise to such activities.

² In Kanelopoulos et al. (1995), the size of the underground economy is estimated as the ‘initial discrepancy’ between expenditures and income estimates of GNP while in IOBE (Tatsos, 2001) a currency demand equation is estimated. In the latter approach the demand for currency is divided into two parts: one arising from measured activity and one arising from activity in the underground economy. For a detailed discussion of the methods commonly used to estimate the size of the underground economy, as well as their drawbacks, see Aigner et al. (1988). Of course, data from National Accounts are required to estimate a currency demand function. According to an anonymous referee, as Greek National accounts have been revised by inflating them at approximately 28% since 1988, it is not reasonable to argue that the underground economy still represents as high a percentage of GDP as the IOBE study suggests.

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